

## REMARKS

Applicants thank the Examiner for the Office Action of September 30, 2008. This Amendment is in full response thereto. Thus, Applicants respectfully request continued examination and allowance of the application.

### Claim Rejections Under 35 U.S.C. § 102

Claims 10-16 and 20 were rejected under 35 U.S.C. 102(a) as being anticipated by U.S. Patent No. 4,194,891 (Earls). With respect to claims 10-16, Applicant respectfully traverses because Earls fails to disclose feed air introduced to a pressure swing adsorption system at an inlet temperature between about 50°C and about 90°C. With respect to claim 20, Earls fails to disclose feed air introduced to a pressure swing adsorption system at an inlet temperature between about 50°C and about 90°C.

Applicant has amended the claims to recite that the feed air is obtained from a stream of hot air from a compressor stage of an aircraft engine which is subsequently cooled in a heat exchanger. Thus, they include an active step of cooling the stream of gas after the compressor stage of the aircraft engine with the result that, at the inlet of the PSA system, the cooled stream of gas is at a temperature between about 60 °C and about 80 °C.

The Examiner rejects the claim over Earls based upon a first argument.

- IF: the PSA systems of the invention and Earls both receive pressurized air from a compressor in an aircraft environment
- THEN: the volumetric flow rate of pressurized air supplied is equivalent in both Earls et al and the current application.

While Applicant does NOT take the position that the engine of the aircraft (from which air is received from a compressor stage) in practice of the invention is limited to engines which are different from engines disclosed in Earls or known in the art, Applicant does take the position that the relative amount of air received from the compressor stage (hence the volumetric flow rate) is a design choice that is dependent upon many factors. These factors, to name just a few, may include: the temperature at which the PSA process is to be performed; the type, amount, and particle size of the absorbent; the time durations of the various stages; the number of adsorbers; and the pressure, temperature, and flow rate of product oxygen desired. Thus, the volumetric flow rate of the feed air in the claimed

process is not necessarily and always the same as the volumetric flow rate of the feed air in the Earls process. As such, the Examiner's logic is flawed and the rejection should be withdrawn because it is the Examiner's burden to provide a technical rationale underpinning the legal argument made in an obviousness rejection, and the Examiner has not satisfied that burden.

The Examiner also rejects the claim over Earls based upon a second argument.

- IF: the above argument regarding volumetric flow rate is true
- AND IF: the feed air pressure in Earls and the claimed process are within the same range
- THEN: the feed air temperature at the inlet of the PSA system of the claimed process and of Earls is inherently the same.

One of ordinary skill in the art will recognize that, in the context of the claimed subject matter, the temperature of the feed gas is based upon several factors, including: a) the mass, volume, and pressure of the gas; and b) whether and how much cooling of the feed gas is performed downstream of the compressor stage of the engine and upstream of the inlet of the PSA system. Thus, the temperature of the feed air at the inlet of the PSA system in the claimed process is not necessarily and always the same as that of the feed air in the Earls process. As such, the Examiner's logic is flawed and the rejection should be withdrawn because it is the Examiner's burden to provide a technical rationale underpinning the legal argument made in an obviousness rejection, and the Examiner has not satisfied that burden.

The Examiner also rejects the claim over Earls based upon a third argument.

- IF: the total cycle time of Earls is within the same range as that of the claimed process
- AND IF: the adsorbent particle size of Earls is within the same range as that of the invention
- THEN: the feed air temperature at the inlet of the PSA system of the claimed process and of Earls is inherently the same.

Again, one of ordinary skill in the art will recognize that, in the context of the claimed subject matter, the temperature of the feed gas is based upon several factors, including: a) the mass, volume, and pressure of the gas; and b) whether

and how much cooling of the feed gas is performed downstream of the compressor stage of the engine and upstream of the inlet of the PSA system. Applicant respectfully asserts that one of ordinary skill in the art will recognize that the feed air temperature at the inlet of a PSA system is not always and necessarily controlled by the adsorbent particle size and cycle time. Rather, any hypothetical nexus between adsorbent particle size, cycle time, and feed air temperature at the PSA inlet is tenuous at best. As such, the Examiner's logic is flawed and the rejection should be withdrawn because it is the Examiner's burden to provide a technical rationale underpinning the legal argument made in an obviousness rejection, and the Examiner has not satisfied that burden.

In conclusion, because Earls does not explicitly or implicitly disclose, teach, or suggest the claimed feed air temperature at the inlet of the PSA system, the rejection should be withdrawn.

#### **Claim Rejections Under 35 U.S.C. § 103:**

Claims 17-19 and 21 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Earls, et al. (USPN: 4,194,891). With respect to claims 17-19, Applicant respectfully traverses because Earls et al. fails to disclose, teach, or suggest feed air introduced to a pressure swing adsorption system at an inlet temperature between about 50°C and about 90°C for the reasons explained above. With respect to claim 21, Applicant respectfully traverses because Earls et al. fails to disclose, teach, or suggest feed air introduced to a pressure swing adsorption system at an inlet temperature between about 60 °C and about 70 °C for the reasons explained above.

#### **CONCLUSION**

Accordingly, it is believed that the present application now stands in condition for allowance. Early notice to this effect is earnestly solicited. Should the examiner believe a telephone call would expedite the prosecution of the application, he/she is invited to call the undersigned attorney at the number listed below.

A Request for Continued Examination and a Petition for a One Month Extension of Time have been contemporaneously submitted with this Amendment along with the associated fees. Otherwise, it is believed that no fee is due at this

time. If that belief is incorrect, please debit deposit account number 01-1375. Also, the Commissioner is authorized to credit any overpayment to deposit account number 01-1375.

Respectfully submitted,

Date: **January 30, 2009**

/Christopher J. Cronin/

Christopher J. Cronin

Registration No. 46,513

Air Liquide  
2700 Post Oak Blvd., 18<sup>th</sup> Floor  
Houston, Texas 77056  
Phone: 302-286-5525  
Fax: 713-624-8950